

## Original Article

### A survey on the factors influencing the pattern of medicine's use: Concerns on irrational use of drugs

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## ABSTRACT

**Objective:** Pharmacists have a remarkable role in rational use of drugs by dissemination of drug information to guide patients, physicians, and policy makers. The present study was undertaken to evaluate the pharmacists' view point about the main factors affecting current drug use pattern regarding rational drug use and the most effective strategies for improving and promoting rational drug use among pharmacists.

**Methods:** In a cross-sectional survey, pre-designed questionnaires were filled in convenient sampling by pharmacists who had attended the congress of rational drug use in Tehran, Iran.

**Findings:** A total of 144 pharmacists with the average age of 40.78 years old were enrolled to the study. Data indicated that the most priorities in irrational use of drugs from pharmacists' view point were lack of appropriate cooperation and communication between physicians and pharmacists (39%), pharmacists' low tariff and economic issues (34%), lack of public knowledge about drug usage (45%), and lack of supervisory regulations on pharmacy practice (15.8%).

**Conclusion:** In this study, lack of public knowledge and awareness about appropriate use of medicines was the most important element from pharmacists' viewpoint in occurrence of irrational drug use. Dissemination of information and compiling of diverse strategies in education, management, regulation, and finance can be very efficient due to a strong relationship between drug policies and performance of regulations and supervisions as well as drug services.

**Keywords:** Drug consultation; drug information; drug policy; pharmacists' roles; rational drug use

## INTRODUCTION

Medicines are essential parts of treatment as well as prevention in health-care system. They may be regarded as two-sided swords and inappropriate use of drugs can cause adverse drug effects and may

increase the risk of drug interactions.<sup>[1,2]</sup> A variety of factors may affect drug use pattern such as physicians' prescribing behavior, pharmacists' proper view of patients' health issues, insurance policies, etc.<sup>[3]</sup> The effective communication between these factors and their acts in terms of rational drug use will increase patient compliance. Pharmacists as key elements in the cycle of drug use, play an effective role in all patient-related areas by giving correct information about the proper use of drugs to physicians and patients, issuing orders according to the physicians' prescriptions, contributing in drug selection and prescription committees, conducting pharmaceutical researches, giving consultation to patients and providing medical care.<sup>[4]</sup> Identification of the

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pharmacists' true role in the therapeutic cycle and the patient-based healthcare system is very crucial to provide efficient health system and public access to healthcare services.

The exact definition of the roles of all participants of the health team and their collaboration with each other and the patients leads to safe administration of medicine that may reduce or prevent drug related adverse effects and increases the success of the therapy. Actually in Iran, the basis of medical consultation with the physician and the patient as an educational necessity and the pharmacists' role in follow-up therapies are not properly taught in most pharmacy colleges. Moreover, because of the ways that pharmacies run currently, the knowledge of pharmacists would not be valuable to aid health promotion. Although, few studies about the role of pharmacists in promoting rational use of drugs have been conducted in Iran, the role of pharmacists is not clearly defined and most of them are confined to prescription filling.<sup>[5]</sup> Therefore, it is not surprising to state that all pharmacists should be trained to cover the mentioned gap in patient-physician-pharmacist communication and rational drug use. To do this, the pharmacists' beliefs about the main factors affecting current medicine use pattern should be identified as the first step. A thorough evaluation of the intervention for improving and promoting rational drug use may bring important benefits, whereas inappropriate prescribing may lead to undesirable consequences. Few studies have been performed to develop and test implementation strategies for promoting rational drug use in Iran.<sup>[6]</sup> The present study was undertaken to evaluate the pharmacists' view point about the main factors affecting current drug use pattern regarding rational drug use and the most effective strategies for improving and promoting rational drug use among pharmacists.

## METHODS

This study was a cross-sectional survey, which was conducted using inquiry approach. Participants of the study were selected through convenient sampling among the pharmacists attending a congress on the rational drug use in Tehran in 2010. The information was gathered using a 2-part questionnaire consisting of the individuals' demographic data and also questions on the problems seen in the use of prescribed drugs or those sold over the counter. The questionnaire was a 9 item semi-structured self-reporting one which has been prepared by the authors. Accuracy of the questionnaire assessed by expert opinion and for reliability of the questionnaire

we used Chronbach's alpha according to a pilot study on 15 physicians prior to the main study, which was above 0.6 and indicated acceptable internal consistency and reliability of the questionnaire.

Before conducting the main study, in order to identify the problems in the questionnaire, the participants' opinions about each question were asked in the pilot study and necessary modifications in the questionnaire and the method were made accordingly. According to the pilot study and the expected degree of the most important reasons for irrational prescription by the target population, the sample size was determined to be 150 including missing due to non-response of 10%. The items of the questionnaire were developed based on the results of the pilot study about rational drug prescription and use.

After completing the questionnaires by the studied participants, data were entered into the statistical software and the values of percentage, mean, and standard deviation were calculated to describe the qualitative and quantitative variables.

## RESULTS

Totally 144 pharmacists were included consisting 46.9% (68) male and (76) female (96% response rate). The average ( $\pm$  standard deviation) age of the samples was 40.78 ( $\pm 9.78$ ) years old. About 45.1% of the included cases were graduated between 1990 and 2000. Regarding to employment status, 21.3% of the participants were working in the state medical centers, 16.7% in private centers, 69.3% in private pharmacies, and 6% in management/official professions.

As primary reasons for irrational drug use from participants' view point in this study, 39% of the pharmacists referred to lack of communication with the physicians, 34% to the pharmacists' low tariff, 45% to lack of updated drug information, and 15.8% to the weak supervisory regulations.

As many as 43.3% of the participants knew lack of public knowledge as the reason for irrational drug use while 28% attributed it to weak insurance coverage, 21.3% to physicians and their prescription methods and 17.3% to pharmacies and their selling of prescription drugs without prescription. From the viewpoint of the pharmacist participated in the study, inappropriate people's belief about the role of pharmacists (38%) and little time for giving consultation (35.3%) were the most important factors for drug delivery without scientific consultation to the patient [Figure 1].

Regarding the performance of educational programs, 46.7% preferred face to face education or workshops,

35.3% favored publishing of the educational materials in written form and 21.3% preferred online education.

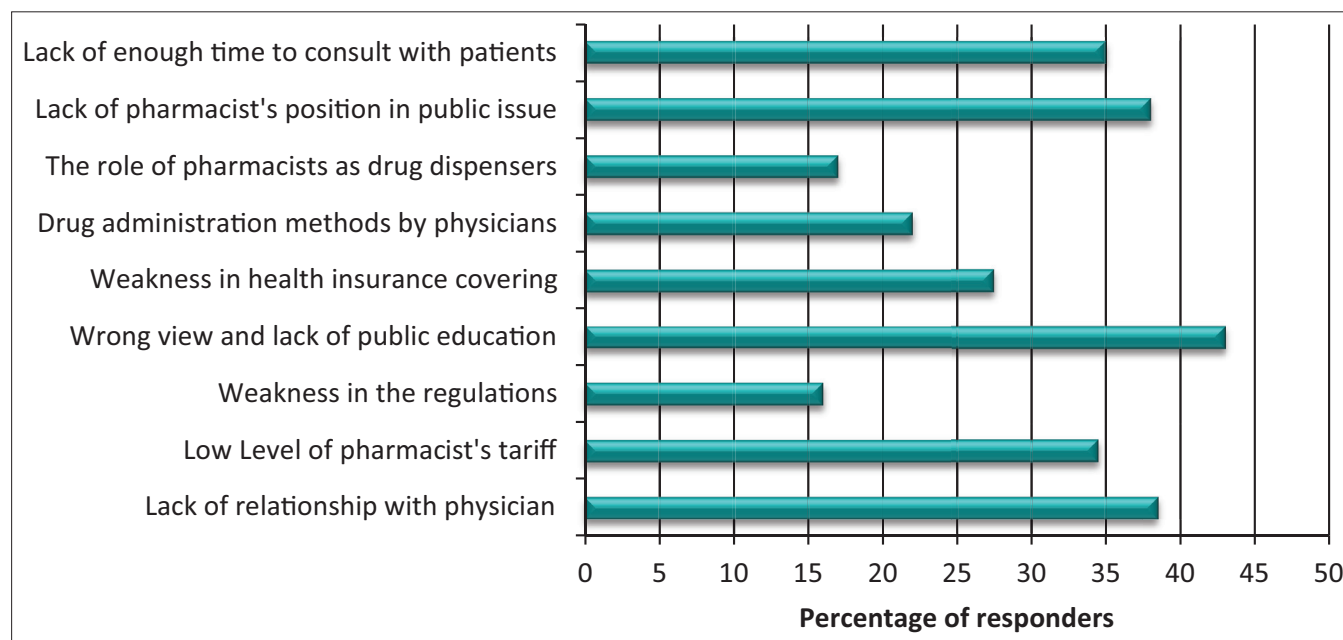
With regard to the importance of drug prescription and its improper use in the country, 76% of the pharmacists agreed to performing interventions to promote rational drug use and prevent improper drug use by the relevant authority. Furthermore, 52% believed that giving feedback about pharmacies' performance can have a great effect in modifying the current situation.

## DISCUSSION

Irrational drug use is a problem of the most developing countries.<sup>[7]</sup> Numerous studies have been conducted to determine the pattern of drug use and its causes in Iran.<sup>[1,3,8-10]</sup> The best examples are studies have been conducted by Farshchi *et al.* and Nikfar *et al.*, on drugs like diphenoxylate tablet<sup>[11]</sup> or nitroglycerin ampoule<sup>[12]</sup> which have interesting reasons behind their irrational use. Pharmacists are usually the last health-care providers with whom a patient comes in contact before using a medication<sup>[13-15]</sup> and also they often see patients in several occasions between routine physician visits.<sup>[16]</sup> Therefore, the point of view of pharmacists on the rational drug use and planning strategies to modify the current trend is inevitably important and effective. In terms of employment conditions, the pattern of participants in the present study was similar to their distribution in the community. The analysis of the present study shows that people's false belief about

drug, such that they believed injectable form of medicines are more effective than oral forms or their insists on receiving antibiotics for common cold, is at the highest level of importance in generating conditions of drug use. This factor also impedes the pharmacist from doing their duty of giving medical consultation and is a great problem that policy makers face in the area of drug prescription and use. If this problem looked carefully, it would be revealed that lack of expertise in consulting and giving information is the main reason. Interestingly, the results of this study also confirm that idea. As many as 17.3% of the participants believed that presenting drugs without consultation is resulted from inappropriate curriculum taught in pharmacy courses and 39% stated that irrational prescription of drugs by the pharmacist could be related to lack of communication with physicians. Of course, it should not be forgotten that physicians themselves suffer from the same lack of efficient knowledge on the good prescription practice.

Service providers as well as service buyers see economic concepts as effective factors in creating the present conditions in drug use. The results of the present study show that low tariff and financial issues of pharmacists as well as the weak insurance coverage for all medicines in one hand and the people's financial problems are further strengthening irrational drug use. A close relationship between drug policies and setting and performing effective supervisory regulations with presenting medical services by pharmacies has been proved.<sup>[17]</sup> In this study, 15.8% of the participants believed that weak supervisory



**Figure 1:** The most important factors influencing the pattern of medicine's use from the viewpoint of pharmacists

regulation is an important factor in irrational prescription of drugs by the pharmacists. However, this can be one of the most important reasons for the provision of any kind of selling medicines without prescription in pharmacies.

As it was previously stated, lots of effort was made to develop different strategies for solving this problem and promoting rational drug prescription and use. The majority of these strategies can be divided into four main groups including, educational, managerial, regulatory, and financial strategies.<sup>[7]</sup> Studies have shown that short, interactive, problem-oriented training courses using appropriate training materials significantly improved drug prescribing practices.<sup>[18,19]</sup> The results of the present study showed that 46.7% of the pharmacists find face to face education or workshop to be the most effective teaching method. Although 35.3% of the participants believed that publishing of teaching materials in written form is more effective, some studies have shown that printed materials are not effective *per se*.<sup>[20-22]</sup>

Considering different viewpoints about the effectiveness of interventions and modifying strategies in drug prescription and use, the results of this study in overall indicate that 76% of individuals find the interventions useful. With regard to these results and the importance of the pharmacists' role and status in the cycle of rational drug use, it is suggested to conduct further studies to clarify the reasons behind this problem and the best strategies to solve them throughout the country. Each conclusion derived from such studies can be extrapolated to other countries with the same of close health regulatory.

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## AUTHORS' CONTRIBUTION

FS carried out the concept, design, literature search, data acquisition, data analysis, manuscript preparation and manuscript editing. FA provided assistance in literature search, data collection and participated in manuscript preparation. AM was responsible for statistical analysis. MA revised the manuscript. All the authors approved the final manuscript.

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